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Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a crystalline semiconductor film on an insulating surface;

forming an insulating film on said crystalline semiconductor film;

introducing a <u>first</u> dopant impurity into said crystalline semiconductor film through said insulating film by an <u>a first</u> ion doping;

annealing said crystalline semiconductor film; and

forming a gate electrode over said insulating film[[,]]; and

introducing a second dopant impurity into said crystalline semiconductor film by a second ion doping by using the gate electrode as a mask,

wherein a peak of a concentration profile of said <u>first</u> dopant impurity is located in said insulating film.

2. (Original) A method according to claim 1 wherein said insulating film comprises silicon oxide.

3. (Canceled)

- 4. (Currently amended) A method according to claim 1 wherein said <u>first</u> dopant impurity is boron.
- 5. (Original) A method according to claim 1 wherein said crystalline semiconductor film comprises polycrystalline silicon.

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6. (Canceled)

7. (Original) A method according to claim 4 wherein said boron is supplied by diborane gas.

- 8. (Original) A method according to claim 1 further comprising a step of removing said insulating film.
- 9. (Original) A method according to claim 1 wherein said semiconductor device comprises an active matrix display device having thin-film transistors.
- 10. (Original) A method according to claim 1 wherein said semiconductor device comprises a shift register circuit having thin-film transistors.
- 11. (Original) A method according to claim 1 further comprising a step of irradiating a laser light to said crystalline semiconductor film.
- 12. (Withdrawn) A method of manufacturing a semiconductor device comprising the steps of:

forming a crystalline semiconductor film on an insulating substrate;

forming an insulating film on said semiconductor film;

introducing a dopant impurity into said semiconductor film through said insulating film by ion doping; and

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irradiating a laser light to said semiconductor film to activate said dopant impurity,

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wherein a peak of a concentration profile of said dopant impurity is located in said insulating surface.

13. (Withdrawn) A method according to claim 12 wherein said insulating film comprises silicon oxide.

14. (Canceled)

- 15. (Withdrawn) A method according to claim 12 wherein said dopant impurity is boron.
- 16. (Withdrawn) A method according to claim 12 wherein said semiconductor film comprises polycrystalline silicon.

17. (Canceled)

- 18. (Withdrawn) A method according to claim 15 wherein said boron is supplied by diborane gas.
- 19. (Withdrawn) A method according to claim 12 further comprising a step of removing said insulating film.
- 20. (Withdrawn) A method according to claim 12 wherein said semiconductor device comprises active matrix devices made of thin-film transistors.

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21. (Withdrawn) A method according to claim 12 wherein said semiconductor device comprises a shift resistor circuits made of thin-film transistors.

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22. (Currently amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a crystalline semiconductor film on an insulating surface;

forming an insulating film on said crystalline semiconductor film;

introducing a <u>first</u> dopant impurity into said crystalline semiconductor film through said insulating film by an <u>a first</u> ion doping;

annealing said crystalline semiconductor film; and

forming a gate electrode over said insulating film[[,]]; and

introducing a second dopant impurity into said crystalline semiconductor film by a second ion doping by using the gate electrode as a mask,

wherein a peak of a concentration profile of said <u>first</u> dopant impurity is located above said insulating surface.

23. (Original) A method according to claim 22 wherein said insulating film comprises silicon oxide.

24. (Canceled)

25. (Currently amended) A method according to claim 22 wherein said <u>first</u> dopant impurity is boron.

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26. (Original) A method according to claim 22 wherein said crystalline semiconductor film comprises polycrystalline silicon.

27. (Canceled)

- 28. (Original) A method according to claim 25 wherein said boron is supplied by diborane gas.
- 29. (Original) A method according to claim 22 further comprising a step of removing said insulating film.
- 30. (Original) A method according to claim 22 wherein said semiconductor device comprises an active matrix display device having thin-film transistors.
- 31. (Original) A method according to claim 22 wherein said semiconductor device comprises a shift register circuit having thin-film transistors.
- 32. (Original) A method according to claim 22 further comprising a step of irradiating a laser light to said crystalline semiconductor film.
- 33. (Withdrawn) A method of manufacturing a semiconductor device comprising the steps of:

forming a crystalline semiconductor film on an insulating surface; forming an insulating film on said crystalline semiconductor film;

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introducing a dopant impurity into said crystalline semiconductor film through said insulating film by an ion doping; and

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irradiating a laser light to said semiconductor film to activate said dopant impurity, wherein a peak of a concentration profile of said dopant impurity is located above said insulating surface.

34. (Withdrawn) A method according to claim 33 wherein said insulating film comprises silicon oxide.

35. (Canceled)

- 36. (Withdrawn) A method according to claim 33 wherein said dopant impurity is boron.
- 37. (Withdrawn) A method according to claim 33 wherein said semiconductor film is a polycrystalline semiconductor film.

38. (Canceled)

- 39. (Withdrawn) A method according to claim 36 wherein said boron is supplied by diborane gas.
- 40. (Withdrawn) A method according to claim 33 further comprising a step of removing said insulating film.

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41. (Withdrawn) A method according to claim 33 wherein said semiconductor device comprises active matrix devices made of thin-film transistors.

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- 42. (Withdrawn) A method according to claim 33 wherein said semiconductor device comprises a shift resistor circuits made of thin-film transistors.
- 43. (Currently amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a crystalline semiconductor film having a portion to become a channel region on an insulating surface;

forming an insulating film on said crystalline semiconductor film;

introducing a <u>first</u> dopant impurity into at least said portion through said insulating film by an <u>a first</u> ion doping;

annealing said crystalline semiconductor film; and

forming a gate electrode over said portion through said insulating film[[,]]; and

introducing a second dopant impurity into said crystalline semiconductor film by a second ion doping by using the gate electrode as a mask,

wherein a peak of a concentration profile of said <u>first</u> dopant impurity is located in said insulating film.

- 44. (Original) A method according to claim 43 wherein said semiconductor device comprises an active matrix display device having thin-film transistors.
- 45. (Original) A method according to claim 43 wherein said semiconductor device comprises a shift register circuit having thin-film transistors.

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46. (Original) A method according to claim 43 wherein said concentration is within a range from 5×10^{15} atoms/cm³ to 5×10^{17} atoms/cm³.

- 47. (Original) A method according to claim 43 further comprising a step of irradiating a laser light to said crystalline semiconductor film.
- 48. (Withdrawn) A method of manufacturing a semiconductor device comprising the steps of:

forming a crystalline semiconductor film on an insulating substrate;

forming an insulating film on said semiconductor film;

introducing a dopant impurity into said semiconductor film through said insulating film by ion doping; and

irradiating a laser light to said semiconductor film to activate said dopant impurity,

wherein a peak of a concentration profile of said dopant impurity is located in said insulating surface.

- 49. (Withdrawn) A method according to claim 48 wherein said semiconductor device comprises active matrix devices made of thin-film transistors.
- 50. (Withdrawn) A method according to claim 48 wherein said semiconductor device comprises a shift resistor circuits made of thin-film transistors.
- 51. (Withdrawn) A method according to claim 48 wherein said concentration is within a range from 5 x 10^{15} atoms/cm³ to 5 x 10^{17} atoms/cm³.

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52. (Currently amended) A method of manufacturing a semiconductor device comprising the steps of:

forming a crystalline semiconductor film having a portion to become a channel region on an insulating surface;

forming an insulating film on said crystalline semiconductor film;

introducing a <u>first</u> dopant impurity into at least said portion through said insulating film by an <u>a first</u> ion doping;

annealing said crystalline semiconductor film; and

forming a gate electrode over said portion through said insulating film[[,]]; and

introducing a second dopant impurity into said crystalline semiconductor film by a second ion doping by using the gate electrode as a mask,

wherein a peak of a concentration profile of said <u>first</u> dopant impurity is located above said insulating surface.

- 53. (Original) A method according to claim 52 wherein said semiconductor device comprises an active matrix display device having thin-film transistors.
- 54. (Original) A method according to claim 52 wherein said semiconductor device comprises a shift register circuit having thin-film transistors.
- 55. (Original) A method according to claim 52 wherein said concentration is within a range from 5×10^{15} atoms/cm³ to 5×10^{17} atoms/cm³.
- 56. (Withdrawn) A method according to claim further comprising a step of irradiating a laser light to said crystalline semiconductor film.

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57. (Withdrawn) A method of manufacturing a semiconductor device comprising the steps of:

forming a crystalline semiconductor having a portion to become a channel region on an insulating surface;

forming an insulating film on said semiconductor film;

introducing a dopant impurity into said semiconductor film through said insulating film by ion doping; and

irradiating a laser light to said semiconductor film to activate said dopant impurity,

wherein a peak of a concentration profile of said dopant impurity is located in said insulating surface.

- 58. (Withdrawn) A method according to claim 57 wherein said semiconductor device comprises active matrix devices made of thin-film transistors.
- 59. (Withdrawn) A method according to claim 57 wherein said semiconductor device comprises a shift register circuit having thin-film transistors.
- 60. (Withdrawn) A method according to claim 57 wherein said concentration is within a range from 5 x 10¹⁵ atoms/cm³ to 5 x 10¹⁷ atoms/cm³.
- 61. (Previously presented) A method according to claim 1 wherein said annealing step is conducted by a heating.

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62. (Previously presented) A method according to claim 22 wherein said annealing step is conducted by a heating.

- 63. (Previously presented) A method according to claim 43 wherein said annealing step is conducted by a heating.
- 64. (Previously presented) A method according to claim 52 wherein said annealing step is conducted by a heating.
- 65. (Currently amended) A method of manufacturing a semiconductor device having a thin film transistor comprising the steps of:

forming a crystalline semiconductor film on an insulating surface;

forming an insulating film on said crystalline semiconductor film;

introducing a <u>first</u> dopant impurity into at least a portion of said crystalline semiconductor film through said insulating film by an a first ion doping;

removing said insulating film after said introducing step; and

annealing said crystalline semiconductor film after said removing step[[,]]; and

introducing a second dopant impurity into said crystalline semiconductor film by a second ion doping,

wherein said portion constitutes a channel region of said thin film transistor,

wherein a peak of a concentration profile of said <u>first</u> dopant impurity is located in said insulating film.

66. (Previously presented) A method according to claim 65 wherein said insulating film comprises silicon oxide.

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67. (Currently amended) A method according to claim 65 wherein said first dopant impurity is boron.

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- 68. (Previously presented) A method according to claim 65 wherein said crystalline semiconductor film comprises polycrystalline silicon.
- 69. (Previously presented) A method according to claim 67 wherein said boron is supplied by diborane gas.
- 70. (Previously presented) A method according to claim 65 wherein said semiconductor device comprises an active matrix display device having thin-film transistors.
- 71. (Previously presented) A method according to claim 65 wherein said semiconductor device comprises a shift register circuit having thin-film transistors.
- 72. (Previously presented) A method according to claim 65 further comprising a step of irradiating a laser light to said crystalline semiconductor film.
- 73. (Previously presented) A method according to claim 65 wherein said annealing step is conducted by a heating.
- 74. (Currently amended) A method of manufacturing a semiconductor device having a thin film transistor comprising the steps of:

forming a crystalline semiconductor film on an insulating surface;

forming an insulating film on said crystalline semiconductor film;

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introducing a <u>first</u> dopant impurity into at least a portion of said crystalline semiconductor film through said insulating film by <u>an a first</u> ion doping;

removing said insulating film after said introducing step; and

annealing said crystalline semiconductor film after said removing step[[,]]; and

introducing a second dopant impurity into said crystalline semiconductor film by a second ion doping,

wherein said portion constitutes a channel region of said thin film transistor,

wherein a peak of a concentration profile of said <u>first</u> dopant impurity is located above said insulating surface.

- 75. (Previously presented) A method according to claim 74 wherein said insulating film comprises silicon oxide.
- 76. (Currently amended) A method according to claim 74 wherein said <u>first</u> dopant impurity is boron.
- 77. (Previously presented) A method according to claim 74 wherein said crystalline semiconductor film comprises polycrystalline silicon.
- 78. (Previously presented) A method according to claim 76 wherein said boron is supplied by diborane gas.
- 79. (Previously presented) A method according to claim 74 wherein said semiconductor device comprises an active matrix display device having thin-film transistors.

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80. (Previously presented) A method according to claim 74 wherein said semiconductor device comprises a shift register circuit having thin-film transistors.

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- 81. (Previously presented) A method according to claim 74 further comprising a step of irradiating a laser light to said crystalline semiconductor film.
- 82. (Previously presented) A method according to claim 74 wherein said annealing step is conducted by a heating.

Claims 83-86 (Canceled)